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SHORT REPORT

Successful Repair of Ruptured Abdominal Aortic Aneurysm in a 96-year-old Woman

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Introduction

The first successful repair of a ruptured abdominal aortic aneurysm was reported in 1954 by Gerbode.[1] Since then ruptured abdominal aortic aneurysms continue to have a high overall mortality rate of about 50%.[2] Among patients over 80 years of age a mortality rate of 92% was reported compared to those younger than 80 years with 68%.[3,4] Considering these results some think a selective policy should be adopted in deciding whether patients are likely to survive.[4] However, others think that every patient with a ruptured abdominal aortic aneurysm should undergo surgery.[5]

Case Report

A 96-year-old female with an uneventful past medical history presented with an acute episode of abdominal pain and a palpable pulsating abdominal mass. Bedside ultrasound performed by the emergency physician detected a 4.2×4.1 cm infrarenal aneurysm. Contrast computed tomography confirmed the diagnosis and revealed a retroperitoneal perforation as well as extension into the right iliac artery (Fig. 1).

The patient was taken to the operating theatre and underwent resection of the leaking abdominal aortic aneurysm with placement of a tube graft. After declamping rupture of the right iliac artery occurred at a blood pressure of 140 mmHg so that an additional placement of a bifurcation graft to the tube graft was necessary. Total infrarenal clamping time was extended to 139 min in addition to prior infradiaphragmal clamping of 9 min. After intensive care therapy for 12 days the patient was transferred to a general surgical ward and was discharged to a rehabilitation facility for physical therapy after 4 weeks of inpatient hospital care. She did not suffer from any neurological disorders and was able to continue her previous life after rehabilitation.

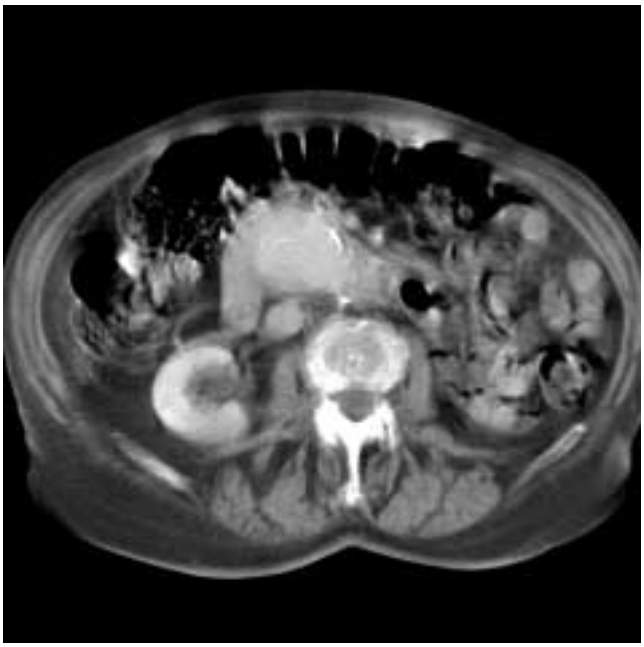

Fig. 1. Abdominal contrast CT showing a retroperitoneal perforation as well as aneurysmal extension into the right iliac artery.

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Discussion

Most studies have estimated that 2% to 4% of adults will eventually develop aneurysms of the abdominal aorta.[6] As up to 66% are unrecognised,[5] rupture is frequently the first manifestation of an abdominal aortic aneurysm. Risk of rupture and long-term survival of patients without operation depends on the size of the aneurysm. The 5-year rate for rupture of aneurysms ranges from 75% in those measuring 7.0 cm or more to approximately 10% of all aneurysms less than 4.0 cm.[7] Due to a 30% rate of initial misdiagnoses and a high mortality associated with rupture the diagnosis should be considered in elderly patients presenting with abdominal or back pain and transitory events of hypotension.[8] The problem to be borne in mind is to decide whether a surgical repair is likely to result in an acceptable outcome for a particular patient.[9] Five independent preoperative factors associated with mortality have been identified by statistical analysis: age >76 years, creatinine level >0.19 mmol/l, unconsciousness after arrival, anaemia (Hb <9 g%) and electrocardiographic verified myocardial ischaemia. Mortality depends on the number of risk factors present and ranges from 37% for one risk factor to 72% with two and 100% with three or more factors.[9] Age was the only risk factor present in the patient reported indicating a risk of 37% as discussed above. Following Perler's comment[6] a mildly aneurysmal iliac artery was left and a tube graft placed to minimise operative time. Unexpected rupture of the distal anastomosis required a further bifurcation graft placement. Though clamping time had to be extended and further blood transfusion was necessary the fortunate outcome supports the opinion that age should not be used as a single predictor of outcome in individual cases. To our knowledge, this is the oldest patient reported as having undergone successful aortic aneurysm repair.

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